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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,414	04/13/2000	Takahiro Oguchi	P/1071-985	7261

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EXAMINER

GARCIA, JOANNIE A

ART UNIT PAPER NUMBER

2823

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/548,414

Applicant(s)

OGUCHI, TAKAHIRO

Examiner

Joannie A Garcia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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The disclosure is objected to because of the following informalities: On page 5, line 19, --to-- should precede "be conventionally formed". On page 8, line 1, "However, when a through holes 20A is generated" should be replaced with --However, when through holes 20A are generated--. On page 4, line 2, "FIGS.. 6A and 6B" should be replaced with --FIGS. 6A and 6B--.

Appropriate correction is required.

The recitation of "A method of manufacturing an external force detection sensor" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in combination with Cleaves (U.S. Patent 6,004,874).

Applicant's admitted prior art is teaching a method including through-hole dry etching of a silicon material element substrate 3 (Figure 7A, Page 1, lines 15-16, and Page 4, lines 5-7) using a silicon oxide etching stop layer 18 (Figures 7A-7B). Applicant's admitted prior art also teaches forming a recessed part 16 on a back surface 3b of a silicon material element substrate 3 (Figure 7A, Page 1, lines 15-16, and Page 4, lines 5-7), forming a membrane 17 on a face side (Figure 7A), providing a silicon oxide etching stop layer 18 on a top surface of the recessed part of said element substrate (Figure 7B), anodically joining the back surface side of said element substrate with a glass material support substrate 2 (Figure 7C, Page 1, line 17, and Page 4, lines 5-7), and forming a movable sensor element by dry etching of the membrane of said element substrate (Figure 7D, Page 4, lines 25-28 through Page 5, lines 1-10). Applicant's admitted prior art teaches as well, forming said recessed part in a center part of a back surface of the element substrate (Figure 7A). Applicant's admitted prior art does not disclose that said etching stop layer comprises a titanium or aluminum electrically conductive material whose etch selectivity which is the ratio of the dry-etched rate of an element substrate to the dry-etch rate of an etching stop layer is not less than 1. Nevertheless, Cleaves in a related method to etch stop layer fabrication discloses forming an etch stop layer 214 on a top surface of a recessed part in a substrate (Figure 2, and Column 4, lines 15-20), wherein said etch stop layer can be made by either insulating material silicon dioxide, or by conductive material titanium. Given that both, applicant's admitted prior art and Cleaves are drawn to etch stop layer fabrication in IC manufacture, it would have been within the scope of one of ordinary skill in the art to enable formation of etch stop layer 18 of applicant's admitted prior art, by employing the conductive

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material titanium instead of the insulating material silicon dioxide, therefore achieving an etch stop layer with a higher heat conductivity.

With respect to claim 10, it would have been a matter of routine optimization within the teachings of applicant's admitted prior art and Cleeves, to determine a suitable etch selectivity to achieve the etch stop layer formation step.


Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. **See MPEP 203.08.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner J. Garcia whose telephone number is (703) 306-5733. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax number for this group is (703) 308-7722 (and 7724), and (703) 305-3431 (and 3432). MPEP 502.01 contains instructions regarding procedures used in submitting responses by facsimile transmission.



JAG
5/5/02



George Fournon
Primary Examiner
Art Unit 2823